Statistical Bulletin

METROPOLITAN LIFE INSURANCE COMPANY

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Widowhood and Its Duration

THE steady improvement in health conditions has resulted in greater stability of family life in our country. At the beginning of the century, marriages were broken by the death of the husband or wife at a rate of about 28 per 1,000 a year. The reduction in mortality since then has brought this rate down to 18 per 1,000. However, the death rate has declined more rapidly for wives than for husbands, producing a growing excess in the number of widows as compared with widowers. Currently, about 660,000 marriages are broken by death each year. In two thirds of these families the wife is the surviving spouse. Fifty years ago the corresponding proportion was close to one half.

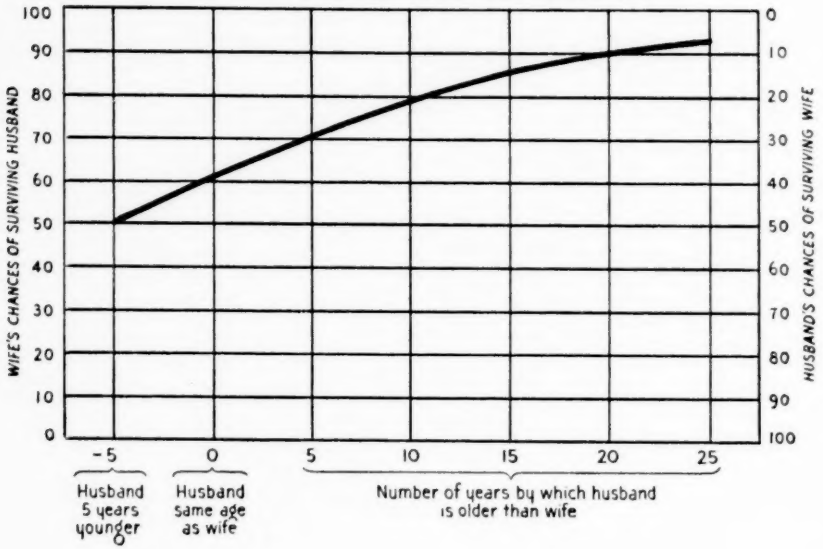
As a consequence of such lower mortality rates, couples marrying today can look forward to a longer lifetime together than those who married in years past, but at the same time the likelihood that a wife will eventually become a widow has increased materially.

The chances that a wife will outlive her husband depend essentially upon the difference in their ages. According to the chart on page 2, which is based on mortality in the United States during 1950, the probability that the wife will be left a widow increases with the number of years that she is younger than her husband. Thus, where husband and wife are the same age, the chances that the wife will outlive her husband are 60 in 100, but they rise to 70 where the husband is 5 years older, and to almost 80 if he is her senior by 10 years. Widowhood is practically a certainty for wives 20 or more years younger than their husband, the chances in such extreme instances being of the order of 90 in 100. Only if the wife is at least 5 years older than her husband are the odds against her being widowed.

The median age at which wives enter widowhood is about 56 years. However, a significant number are much younger when their family life is disrupted by the death of the husband; almost one quarter of the new widows each year are under age 45.

Although widowhood has been postponed to the older ages, most women still have many years of life ahead of them after their husband dies. As is evident from the table on page 2, three quarters of the women who are widowed at age 50 will live 20 years longer; that many years of life also remain for nine out of every 10 wives bereft of their mates before

Chances in 100 That a Married Person Will Survive His or Her Mate Based on Mortality Experience, United States, 1950



CHANCES IN 100 THAT A WHITE WOMAN WILL SURVIVE FOR SPECIFIED NUMBER OF YEARS. UNITED STATES, 1950

PRESENT AGE	YEARS OF SURVIVAL				
	5	10	15	20	25
35	99	98	96	92	88
40	99	96	93	89	82
45	98	95	90	83	73
50	97	92	85	75	61
55	95	88	77	63	45
60	92	81	66	47	28
65	88	72	51	30	13
70	81	58	34	14	4

age 40. Even at age 65, fully one half of the widows can expect to survive for 15 years and almost one third for 20 years.

The problems of widowhood are many, but they vary greatly with age. Among young widows the situation is especially serious, for a large proportion of them have dependent children in their care. Without sufficient income, the young mother often finds herself compelled to seek employment, with some sacrifice to her child-rearing duties. While women entering widowhood at the older ages are not likely to have dependent children, they are often faced with the problem of self-support. Moreover, the chances of securing employment at this stage of life are not too good, since these women have been out of the labor market for many years. Also, the chances of remarriage for older widows are quite small. From whatever aspect the problem of widowhood is viewed, it is a contingency to be recognized and anticipated.

Shift in Mortality to Older Ages

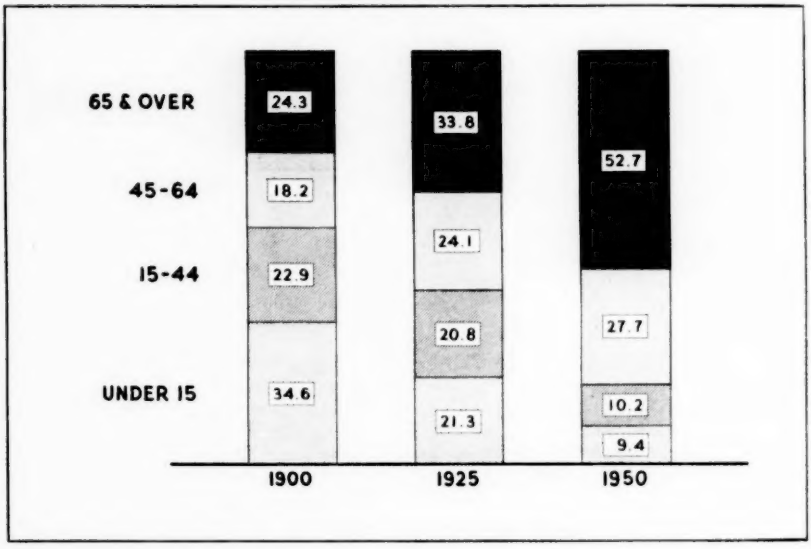
DURING the past half century, deaths have been more and more concentrated at the older ages. In 1900 one fourth of all the deaths in our country were at ages 65 and over; by 1950 the proportion had increased to more than one half. At the same time deaths in the age range 45-64 years rose from 18 to 28 percent of the total. In contrast, the proportion of deaths occurring at the ages under 45 dropped from nearly three fifths in 1900 to one fifth in 1950. These changes are shown in the chart on the following page.

To some extent, the increasing concentration of deaths past midlife reflects the rise in the proportion of older people in the population. Whereas the total population of the United States doubled since the turn of the century, the number of people at ages 45-64 nearly tripled and the number at ages 65 and over quadrupled. In 1900 the aged accounted for 1 in every 25 of the population; at present the ratio is 1 in every 12.

For the most part, however, the shift in mortality reflects the considerably greater progress made in reducing the death rate at the younger than at the older ages. At the age groups under 45 the decrease was at least 65 percent between 1900 and 1950; under age 15 it was no less than 85 percent. Only half as much was the decline at ages 45-54; at ages 65 and over the reduction was 25 percent. It is noteworthy that at every age group the improvement in mortality was greater in the second than in the first half of the 50-year period, as the table on page 5 shows.

A major factor in bringing about these changes in the age picture of mortality has been the remarkable control gained over the infectious diseases of childhood and early adult life. For example, in 1900 the death rate from diarrhea and en-

Percent Distribution of Deaths by Age
United States, 1900-1950



teritis among children in the first year of life was appreciably greater than the present death rate among infants from all causes combined. Similarly, in 1900 the death rate from diphtheria at ages 1-4 was 271 per 100,000—more than 100 times the current rate and nearly twice the total mortality in this age group at the present time. Scarlet fever, measles, whooping cough, and many other childhood diseases have likewise recorded sharp declines in death rate.

Furthermore, many diseases not concentrated at any one period of life have shown a considerably greater reduction in mortality at the younger than at the older ages. For tuberculosis, the downward trend has been so pronounced at the younger ages that the age of maximum mortality has shifted from early and middle adult life to the later ages. Even the cardiovascular-renal diseases have been recording an increasing proportion of deaths at the later ages, as the heart diseases of rheumatic and syphilitic origin—which take their greatest toll up through midlife—have been coming under control.

Altogether, premature death has been greatly reduced since the turn of the century, but much more remains to be done. Even now, one death in every five occurs before age 45; nearly one half of all the deaths in our country are among people who fail to reach the threshold of old age. The infectious diseases, against which spectacular victories have already been scored, still take a heavy toll before midlife.

MORTALITY FROM ALL CAUSES BY AGE
TOTAL PERSONS. UNITED STATES, 1900-1950

YEARS	DEATH RATE PER 1,000			PERCENT DECLINE		
	1950	1925*	1900*	1950 SINCE 1900	1950 SINCE 1925	1925 SINCE 1900
All ages	9.6	11.7	17.2	44	18	32
Under 5	7.5	20.0	50.0	85	63	60
5-14	.6	2.0	3.9	85	70	49
15-24	1.3	3.8	5.9	78	66	36
25-34	1.8	4.8	8.2	78	63	41
35-44	3.6	7.2	10.2	65	50	29
45-54	8.5	12.2	15.0	43	30	19
55-64	19.0	23.3	27.2	30	18	14
65 and over	61.8	76.5	82.3	25	19	7

*Death Registration States.

Accidents are the leading cause of death in the broad age range 1-35 years. Many untimely deaths from the cardiovascular-renal diseases, cancer, and diabetes could be postponed through early detection and prompt treatment.

It is to be expected that premature deaths will be reduced further, thus continuing the long-term trend toward the concentration of mortality in later life. This means that in the future the chronic diseases, particularly the cardiovascular conditions and the malignant neoplasms, will loom even larger than they do now as major factors in morbidity and mortality.

The Current Diabetes Problem

DIABETES remains a disease of major medical and public health interest. Of the chronic diseases common in middle and later life, it is not only one of the easiest to diagnose but it also offers the best prospects of control in the individual patient. As a result of progress in the medical management of the disease and the introduction of insulin therapy, the longevity of diabetics has steadily increased, but this in itself has brought some new problems.

The current mortality picture for diabetes, based upon the experience among the Industrial policyholders of the Metropolitan Life Insurance Company, is shown in the table on page 6. Among white persons the death rates are consistently below 1 per 100,000 at the ages under 15 and are less than 2 per 100,000 up to age 35. Past midlife, however, the rate increases rapidly with advance in age, much more so among women than among men. As a consequence, the death rate from diabetes at ages 55 and over is about twice as high for women as for men.

Colored persons now suffer a higher death rate from the disease

MORTALITY FROM DIABETES MELLITUS
BY AGE, SEX, AND COLOR. METROPOLITAN LIFE INSURANCE COMPANY
INDUSTRIAL DEPARTMENT, 1951-1952

AGE PERIOD (YEARS)	DEATH RATE PER 100,000			
	WHITE		COLORED	
	MALES	FEMALES	MALES	FEMALES
1-74*	9.5	16.0	10.0	19.4
1-4	0.7	0.4	—	—
5-9	.4	.6	—	—
10-14	.3	.8	—	1.5
15-19	.6	1.1	1.9	—
20-24	1.0	1.5	1.9	3.3
25-34	1.7	1.7	3.2	3.7
35-44	5.0	2.0	6.1	9.0
45-54	11.5	12.2	17.3	30.6
55-64	31.2	59.4	26.8	69.2
65-74	72.9	144.3	68.2	124.3

*Adjusted for age on the basis of Metropolitan Life Insurance Company Industrial premium-paying policyholders, 1950.

than do the whites. Among males the margin is slight, but for females the colored rate is the higher by about one fifth. However, the excess mortality among the colored is found only up to age 55 for men and up to age 65 for women. These facts relate to an essentially urban population which is within the reach of the best medical facilities and in which the living and working conditions of the colored are approaching the average community level. In the general population of the United States, the death rate from diabetes among white persons still exceeds that among the colored.

The list of causes of death among diabetics is becoming more and more like that among nondiabetics. This is evident from an analysis, completed recently by the Metropolitan Life Insurance Company, of the experience of the many thousands of diabetic patients treated at the Joslin Clinic in Boston. During the period from January 1, 1950, to May 5, 1953, three fourths of the 1,358 deaths recorded were due to cardiovascular-renal diseases. A major portion of deaths in this broad category was accounted for by heart disease of the coronary type, a condition which occurs earlier and develops faster in diabetics than in nondiabetics.

The second largest cause in this category, accounting for nearly one eighth of the deaths from all causes, was renal disease. Most of these fatalities were due to a serious complication — diabetic nephropathy — which is now perhaps the most important numerically among the causes of death peculiar to diabetes. A high proportion of deaths from this cause occurs among patients with long duration of the disease which

began in childhood or young adult life. To that extent it is a relatively new medical problem in diabetes and, because of its severity, is a source of major concern. Of approximately the same frequency as renal conditions were deaths of cerebral origin. In contrast, gangrene, formerly a frequent and dreaded complication of diabetes, caused only 1.3 percent of all deaths in recent years.

Death from infection has been reduced to minor importance in the total mortality among diabetics, reflecting the generally improved condition of persons with the disease and the benefits attending the use of the antibiotics and chemotherapy. Pneumonia and other nontuberculous respiratory diseases accounted for 4.0 percent of the deaths, and tuberculosis for only 1.0 percent. Notable also are the low proportions of deaths from diabetic coma and insulin reactions. Diabetic coma, which, before insulin, was the major cause of death among diabetics, was responsible for only 1.0 percent of the recent deaths. Even among patients with onset in childhood, only 6.7 percent of the deaths were due to this cause. Fatal insulin reactions were few, accounting for only 3 out of the 1,358 deaths.

In the recent period, cancer was responsible for 10 percent of the deaths among patients of the Joslin Clinic. The actual death rate from cancer among diabetics is not very different from that in the general population.

The predominance of the cardiovascular-renal diseases in the mortality picture among diabetics reflects primarily their longer survival and hence their increasing average age at death. Life tables based upon the experience of the Joslin Clinic show that at every age, and more especially at the younger ages, the expectation of life of diabetics has increased substantially. No less than 35 percent of the 1,358 recently deceased patients had lived 20 years or more after the onset of their disease, a far better survival experience than was recorded less than two decades ago.

Further gains in longevity of diabetics are in prospect. These patients will benefit from the fruits of research into the disease and into insulin, as well as from advances in the field of medicine generally. Beyond that, gains of major proportions are possible by greater efforts to diagnose the disease early and to improve the general level of treatment of diabetics. The toll of premature death from diabetes because of neglect of treatment is much greater than it need be. Patients and physicians working as a team can do much to reduce the preventable mortality from the disease.

Firearm Accidents Can Be Prevented

FIREARMS are owned and used safely by a large number of people in the United States. Unfortunately, however, many others, through ignorance or carelessness, fail to exercise adequate precaution in handling and storing such weapons. Too often firearms are left

where young children can get at them. Many inexperienced hunters go afield without proper supervision. Even experienced people, in moments of excitement or overeagerness, forget the caution required in handling guns safely. In consequence, each year firearm accidents take about 2,200 lives in the United States. Such mishaps occur throughout the year, but the death toll reaches its peak during the hunting season.

Nearly 90 percent of the firearm fatalities are among males, teen-age boys frequently being the victims. The death rates from such accidents among males at the various age groups are shown in the table below, which is based on the experience of the Industrial policyholders of the Metropolitan Life Insurance Company in 1950-1952.

AGE PERIOD (YEARS)	DEATH RATE PER 100,000*
1-74	1.6
1-9	0.5
10-14	3.0
15-19	4.0
20-24	1.4
25-34	1.2
35-44	1.3
45-64	1.0
65-74	1.1

*Civilian, nonoccupational deaths.

The highest rate—4.0 per 100,000—was recorded at ages 15-19, with ages 10-14 following close behind. Although the death rates during adult life were appreciably lower, they nevertheless indicate that every age period contributes to the toll of lives lost.

Particular interest centers in the place and the circumstances under which firearm accidents occur. This information is available in the death claim records of 267 Metropolitan Industrial policyholders who were killed in such mishaps in 1949-1951; the details are shown in the table on page 9. Nearly one half of the deaths occurred in and about the home; one third on hunting trips; one sixth in outdoor activities other than hunting; and a very small proportion in such indoor places as garages, barns, taverns, and stores. Home accidents accounted for somewhat more fatalities than hunting and other outdoor activities among children at ages 10-14; in the age groups 15 and older the situation was the other way around.

A majority of the firearm deaths in and about the home resulted from the dangerous practice of playing with a gun—an "unloaded" gun often being pointed and fired at the victim—and from the accidental discharge of firearms while they were being cleaned, repaired, examined, or demonstrated. Some lives were lost by guns going off as they fell or during a scuffle for their possession. A few deaths resulted from the game called "Russian roulette," in which the cylinder of a gun containing but one cartridge is spun around and the participant then points the gun at his head and pulls the trigger on the chance that it is opposite an empty chamber. In

NUMBER OF DEATHS FROM FIREARM ACCIDENTS
ACCORDING TO PLACE OF OCCURRENCE AND ACTIVITY OF PERSON DISCHARGING GUN
TOTAL PERSONS, INDUSTRIAL DEPARTMENT
METROPOLITAN LIFE INSURANCE COMPANY,* 1949-1951

PLACE OF OCCURRENCE AND ACTIVITY	WEAPON DISCHARGED BY			
	TOTAL	VICTIM	ANOTHER PERSON	UNSPECIFIED
Total	267	99	136	32
Home (total)	122	47	63†	12
Playing with weapon	35	11	23	1
Cleaning or repairing weapon	17	12	5	—
Examining or demonstrating weapon	15	3	12	—
Playing "Russian roulette"	6	5	1	—
Scuffling for possession of weapon	5	—	—	5
Dropping weapon	5	4	1	—
Hunting (total)	87	30	51‡	6
Walking into line of fire	16	—	16	—
Tripped while carrying weapon	10	7	3	—
Climbing over or under fence, carrying weapon	8	6	2	—
Carrying weapon in vehicle	7	4	2	1
Loading or unloading weapon	6	—	6	—
Mistaken for game	6	—	6	—
Outdoors, other than hunting (total)	42	15	21	6
Carrying weapon in vehicle	6	4	1	1
Walking into line of fire	5	—	5	—
Examining or demonstrating weapon	5	1	4	—
Other and unspecified	16	7	1	8

*Exclusive of the Pacific Coast and Canada.
†Weapon discharged by member of family in 30 instances.
‡Weapon discharged by member of own hunting party in 42 instances.
NOTE: Only the activities causing the largest number of deaths are listed in detail.

about one half of the fatalities in the home, the gun was discharged by a person other than the victim. Revolvers and pistols outnumbered rifles and shotguns as the lethal weapon; this may reflect the fact that most Industrial policyholders live in urban areas, where hunting rifles are not as common in the home as they are in rural areas.

Outdoors, the activities most frequently responsible for accidental firearm fatalities, particularly among hunters, are: walking into the line of fire; the discharge of guns when men carrying loaded weapons tripped or stumbled or handled them carelessly while climbing over or under a fence; loading and unloading weapons; and being mistaken for game. More hunters in this insurance experience were fatally injured by the guns of their companions than by the weapons of other hunting parties. At least four out of every five of the hunters reported killed by others were hit by members of their own group.

AVAILABLE FOR DISTRIBUTION

The following studies by the Statistical Bureau of the Metropolitan Life Insurance Company have been published recently, and reprints of them will be sent upon request.

1. "Relation of Obesity to Longevity." *New England Journal of Medicine,* June 4, 1953.
2. "Benefits of Reducing." *American Journal of Public Health,* August 1953.
3. "A Tuberculosis Program: Its Results and Implications." (Charts). *Postgraduate Medicine,* August 1953.

DEATH RATES* PER 100,000 POLICYHOLDERS FROM SELECTED CAUSES
INDUSTRIAL PREMIUM-PAYING BUSINESS, WEEKLY AND MONTHLY COMBINED
METROPOLITAN LIFE INSURANCE COMPANY
AUGUST 1953

CAUSE OF DEATH	ANNUAL RATE* PER 100,000 POLICYHOLDERS				
	AUGUST		YEAR-TO-DATE		
	1953	1952	1953	1952	1951
All Causes—total	587.6	615.1	663.3	667.2	665.7
Tuberculosis (all forms)	8.2	11.9	10.5	15.2	18.4
Tuberculosis of respiratory system	7.6	10.7	9.5	13.8	16.7
Syphilis	2.0	2.8	2.6	2.8	3.8
Communicable diseases of childhood	.3	.1	.4	.7	.6
Acute poliomyelitis	2.2	3.7	.7	.7	.5
Malignant neoplasms	119.9	124.7	122.3	122.9	121.8
Digestive system	43.6	50.0	43.3	46.9	47.0
Respiratory system	15.0	14.2	14.8	13.9	13.7
Diabetes mellitus	12.9	12.8	15.6	14.1	15.3
Diseases of the cardiovascular-renal system	279.1	291.8	334.9	340.8	339.9
Vascular lesions, central nervous system	58.1	59.4	66.7	69.5	65.3
Diseases of heart	202.0	212.0	245.8	246.6	248.9
Chronic rheumatic heart disease	12.3	12.5	13.0	13.6	13.8
Arteriosclerotic and degenerative heart disease	149.4	154.2	182.4	179.2	180.9
Hypertension with heart disease	32.2	35.6	40.5	43.2	43.6
Other diseases of heart	8.1	9.7	9.9	10.6	10.6
Hypertension without mention of heart	4.3	5.5	5.7	6.1	6.4
General arteriosclerosis	5.5	5.4	6.0	6.7	6.5
Nephritis and nephrosis	9.2	9.5	10.7	11.9	12.8
Pneumonia	8.0	9.3	16.6	16.9	17.4
Influenza	.8	.5	3.4	2.2	3.3
Ulcers of stomach and duodenum	4.0	4.2	4.6	4.6	4.4
Appendicitis	1.2	2.6	1.3	1.7	1.5
Hernia and intestinal obstruction	3.0	3.2	3.8	3.7	4.2
Gastritis, duodenitis, enteritis, etc.	2.4	3.1	2.3	3.0	2.6
Cirrhosis of liver	8.7	9.0	9.9	9.9	8.9
Complications of pregnancy, childbirth	1.3	1.3	1.3	1.4	1.5
Suicide	5.2	4.9	5.5	6.1	6.4
Homicide	3.2	4.2	2.6	2.8	2.5
Accidents—total	43.5	49.7	38.4	41.8	38.2
Motor vehicle	16.7	18.9	15.1	15.3	14.6
Home	6.1	5.7	6.7	7.1	7.3
Occupational (civilian)	3.2	4.4	3.2	3.7	3.6
War deaths—enemy action	4.4	3.0	2.3	2.5	6.1
All other causes	77.3	72.2	84.4	73.6	68.1

*The rates for 1953 are provisional.

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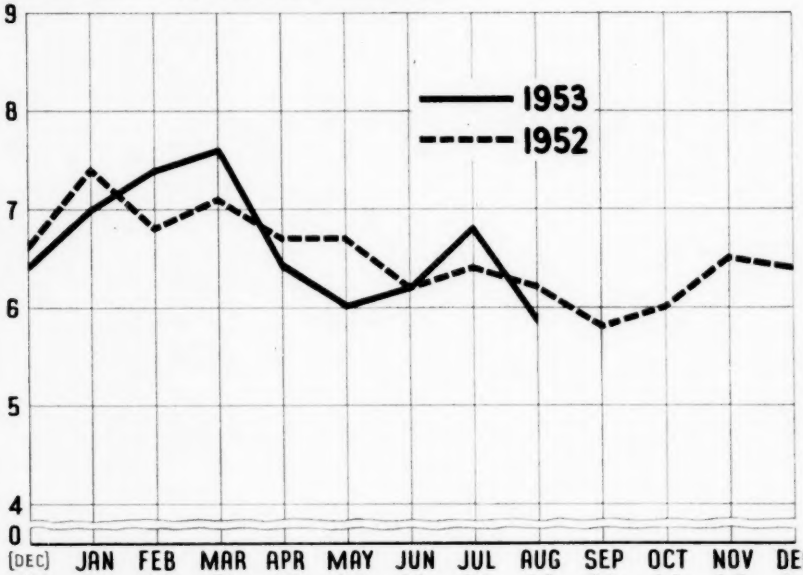
MORTALITY FROM ALL CAUSES

METROPOLITAN LIFE INSURANCE COMPANY • INDUSTRIAL PREMIUM-PAYING BUSINESS
WEEKLY AND MONTHLY COMBINED

DEATH RATES PER 1,000 POLICYHOLDERS • ANNUAL BASIS



(DEC)	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1952	7.4	6.8	7.1	6.7	6.7	6.2	6.4	6.2	5.8	6.0	6.5	6.4
1953	7.0	7.4	7.6	6.4	6.0	6.2	6.8	5.9				

1953 figures are provisional

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